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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,430	08/28/2003	Chih-Wei Chen	LA-7196-124	7234

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EXAMINER

KNAPP, JUSTIN R

ART UNIT PAPER NUMBER

2182

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,430

Applicant(s)

CHEN, CHIH-WEI

Examiner

Justin Knapp

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolli, et al (herein Kolli), US Pub No. 2004/0019710.

4. As per claim 1, Kolli teaches:

a connection interface connected with the one or more storage devices (figure 2, #220, hard disk drive bay provides a connection interface for storage devices #223);

an I/O control circuit for being connected with or separated from the one or more storage devices, wherein the I/O control circuit for being connected with or separated from the one or

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more storage devices, wherein the I/O control circuit outputs an informing signal when a connection status between the one or more storage devices and the I/O control circuit changes (figure 2, #225 provides detecting connection status of the storage devices and outputs a signal to adapter #240); and

a system control circuit connected with the I/O control circuit, for receiving the informing signal from the I/O control circuit and consequently outputting an interrupt request signal (figure 2, #240 sends an interrupt to controller #130).

Kolli does not explicitly teach an interface control circuit connected with the connection interface, for controlling a transmission format and an interface format of the connection interface according to internally stored interface settings in the interface control circuit; and a CPU connected with the connection interface and the system control circuit; for accessing the one or more storage devices via the connection interface, and for receiving the interrupt signal from the system control circuit to consequently determine if the interrupt request signal corresponds to a change of the connection status between the I/O control circuit and the one or more storage devices, wherein if yes, the CPU loads corresponding interface settings into the interface control circuit according to the number and arrangement of the one or more storage devices connected to the I/O control circuit.

Kolli does teach that system control circuit #240 sends a interrupt request signal to controller #130 (figure 2) upon the detection of a removal/insertion event (figure 3, steps 320 and 330). The controller can then isolate the affected drive allowing availability of the rest of the storage system (figure 3, step 340). Kolli's teachings solve the problem of the inability to hot insert and remove storages devices in a storage system that employs a PATA storage interface

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([0004]). It would have been obvious to one of ordinary skill in the art at the time the invention was made that to use Kolli's teachings that solve the problem of hot swapping a PATA storage drive, to then implement traditional hot swapping techniques taught by the prior art for the controller in combination with interface control circuitry to load corresponding interface settings according to the number and arrangement of one or more storage devices in the storage system (see [0003]). Doing so would be necessary in order for a newly inserted drive to be usable and fully functional for a user of the storage system.

5. As per claim 2, Kolli teaches wherein the computer system is a storage server system (figure 1, #100)

6. As per claim 3, Kolli does not explicitly teach wherein the I/O control circuit is a super I/O chip. Official notice is taken that the use of a super I/O chip is notoriously well known in the art. It would have been obvious to one of ordinary skill in the art to use a super I/O chip as it standardizes and simplifies the design of the system, and thus reduces cost.

7. As per claim 4, Kolli does not explicitly teach wherein the system control circuit is a south bridge chip. Official notice is taken that the use of a south bridge chip is notoriously well known in the art. It would have been obvious to one of ordinary skill in the art to use a south bridge chip as it incorporates a number of different controller functions. It looks after the transfer of data to and from the hard disk and all the other I/O devices, and passes this data into the link channel which connects to the north bridge in conventional computer systems.

8. As per claim 5, Kolli teaches wherein the externally connecting storage device is a storage device having large capacity (figure 2, #223 has a large capacity).

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9. As per claim 6, Kolli does not explicitly teach wherein the I/O control circuit has one or more I/O ports for being connected to with the storage devices. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a plurality of I/O ports would be used by Kolli in order to detect the removal/insertion of a plurality of storage devices in the storage system.

10. As per claim 7, Kolli teaches wherein the storage device having large capacity is a disk drive (figure 2, #223 provides a large capacity of disk space).

11. As per claim 8, Kolli does not explicitly teach wherein the I/O port is a GPIO port. Official notice is taken the use of GPIO ports are notoriously well known in the art. It would have been obvious to one of ordinary skill in the art to use GPIO ports as they provide the capability to support several functions thus improving flexibility in a system.

12. As per claim 9, Kolli teaches wherein the connection interface is a disk drive interface ([0012]).

13. As per claim 10, Kolli teaches wherein the disk drive interface is of a format selected from the group consisting of IDE, E-IDE, ATA, and ATAPI ([0012]).

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*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Knapp whose telephone number is (571)272-4149. The examiner can normally be reached on Mon - Fri 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (571)272-4083. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin Knapp  
Examiner  
Art Unit 2182

June 23, 2005